Document details

Back to results | 1 of 1

Materialpruefung/Materials Testing
Volume 57, Issue 10, 2015, Pages 904-908

Flexing test of HDPE/EPR filled CNT radiated nanocomposites for sport shoe soles (Article)

Khalit, M.I.B.[a], Anuar, H.B.[b], Shaffiar, N.M.[b]

[a]Division of Mechanical Engineering, Faculty of Engineering, University Selangor, Man Timur Tambahan, Kuala Selangor Selangor Darul Ehsan, Malaysia
[b]Kuala Lumpur, Malaysia

Abstract

View references (18)

This study was conducted to examine the effect of electron beam (EB) irradiation on the flexing of high density polyethylene (HDPE)/ethylene propylene rubber (EPR) blends and HDPE/EPR filled carbon nanotube (CNT) nanocomposites. The blends are compression molded into the soles of shoes before exposed to EB irradiation. Radiated and nonradiated matrixes as well as nanocomposites were subjected to single force and flexed at specified angles of 900 according to ISO 17707 for flexing test. The flexes were more for samples that were exposed to EB irradiation. Moreover, samples filled with CNT showed a lower flex number. © Carl Hanser Verlag GmbH & Co. KG.

Author keywords

Carbonnanotubes Electron beam Irradiation Flexing test Nanocomposites Sport shoes

Indexed keywords

Engineering controlled terms: Carbon Electron beams High density polyethylenes Irradiation Nanocomposites Sports Yarn

Compendex keywords EB irradiation Electron beam irradiation Exposed to Filled carbon nanotubes High density polyethylene(HDPE) Sport shoe

Engineering main heading: Carbon nanotubes

ISSN: 00255300
CODEN: MTPRA
Source Type: Journal
Original language: English

DOI: 10.3139/120.110786
Document Type: Article
Publisher: Carl Hanser Verlag

References (18)

View in search results format

All Export Print E-mail Save to PDF Create bibliography

1 Norton, E.I., Clay, R.L., Smotrycz, Z.O. (1986) *United States Patent 4*, 574, p. 498. Boston, MA

2 Manjunatha, C.M., Taylor, A.C., Kinloch, A.J., Sprenger, S.

The cyclic-fatigue behaviour of an epoxy polymer modified with micron-rubber and nano-silica particles

(2009) *Journal of Materials Science*, 44 (16), pp. 4487-4490. Cited 30 times.
doi: 10.1007/s10853-009-3653-y

View at Publisher

3 Manjunatha, C.M., Bojja, R., Jagannathan, N., Kinloch, A.J., Taylor, A.C.

Enhanced fatigue behavior of a glass fiber reinforced hybrid particles modified epoxy nanocomposite under WISPERX spectrum load sequence

(2013) *International Journal of Fatigue*, 54, pp. 25-31. Cited 22 times.
doi: 10.1016/j.ijfatigue.2013.04.008

View at Publisher

4 Kane, R.J., Converse, G.L., Roeder, R.K.

Effects of the reinforcement morphology on the fatigue properties of hydroxyapatite reinforced polymers

(2008) *Journal of the Mechanical Behavior of Biomedical Materials*, 1 (3), pp. 261-268. Cited 34 times.
doi: 10.1016/j.jmbbm.2008.01.004

View at Publisher

5 Loos, M.R., Yang, J., Feke, D.L., Manas-Zloczower, I., Unal, S., Younes, U.

Enhancement of fatigue life of polyurethane composites containing carbon nanotubes

(2013) *Composites Part B: Engineering*, 44 (1), pp. 740-744. Cited 44 times.
doi: 10.1016/j.compositesb.2012.01.038

View at Publisher

6 Yu, N., Zhang, Z.H., He, S.Y.

Fracture toughness and fatigue life of MWCNT/epoxy composites

(2008) *Materials Science and Engineering A*, 494 (1-2), pp. 380-384. Cited 94 times.
doi: 10.1016/j.msea.2008.04.051

View at Publisher

7 Brückner, K., Odenwald, S., Schwanitz, S., Heidenfelder, J., Milani, T.

Polyurethane-foam midsoles in running shoes - Impact energy and damping

(2010) *Procedia Engineering*, 2 (2), pp. 2789-2793. Cited 8 times.
http://www.sciencedirect.com/science/journal/18777058
doi: 10.1016/j.proeng.2010.04.067

View at Publisher

8 Rama Sreekanth, P.S., Naresh Kumar, N., Kanagaraj, S.

Improving post irradiation stability of high density polyethylene by multi walled carbon nanotubes

(2012) *Composites Science and Technology*, 72 (3), pp. 390-396. Cited 28 times.
doi: 10.1016/j.compscitech.2011.11.031

View at Publisher

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

9 Kanagaraj, S., Varanda, F.R., Zhil'tsova, T.V., Oliveira, M.S.A., Simões, J.A.O.
Mechanical properties of high density polyethylene/carbon nanotube composites

(2007) *Composites Science and Technology*, 67 (15-16), pp. 3071-3077. Cited 203 times.
doi: 10.1016/j.compscitech.2007.04.024

View at Publisher

10 Szebényi, G., Romhány, G., Vajna, B., Czvikovszky, T.
EB treatment of carbon nanotube-reinforced polymer composites

(2012) *Radiation Physics and Chemistry*, 81 (9), pp. 1383-1388. Cited 5 times.
doi: 10.1016/j.radphyschem.2011.11.015

View at Publisher

11 Quinn, E.
(2014) *When to Replace Running Shoes*
http://sportsmedicine.about.com/od/tipsandtricks/a/replaceshoes.htm

12 Cavanagh, P.R.
(1980) *The Running Shoe Book*. Cited 102 times.
Mountain View: Anderson World, London, UK

13 ISO
(2005) *Footwear - Test Methods for Outsoles - Flex Resistance*, 3.
17707 BSI, London, UK

14 Rigas, C.
Spatial parameters of gait related to the position of the foot on the ground

(1984) *Prosthetics and Orthotics International*, 8 (3), pp. 130-134. Cited 18 times.
doi: 10.3109/03093648409146073

View at Publisher

15 Jamal, N.A.
(2011) *Effects of Electron Beam Irradiation and Maleic Anhydride Polyethylene on HDPE/EPDM Nanocomposites*
MSC Thesis, International Islamic University, Malaysia

16 Ahmad, I., Lane, C.E., Mohd, D.H., Abdullah, I.
Electron-beam-irradiated rice husk powder as reinforcing filler in natural rubber/high-density polyethylene (NR/HDPE) composites

(2012) *Composites Part B: Engineering*, 43 (8), pp. 3069-3075. Cited 11 times.
doi: 10.1016/j.compositesb.2012.04.071

View at Publisher

17 Tang, W., Santare, M.H., Advani, S.G.
Melt processing and mechanical property characterization of multi-walled carbon nanotube/high density polyethylene (MWNT/HDPE) composite films

(2003) *Carbon*, 41 (14), pp. 2779-2785. Cited 298 times.
doi: 10.1016/S0008-6223(03)00387-7

View at Publisher

18 ISO
(2004) *Personal Protective Equipment Protective Footwear*
20346 BSI, London, UK

Khalit, M.I.B.; Division of Mechanical Engineering, Faculty of Engineering, University Selangor, Man Timur Tambahan, Kuala Selangor Selangor Darul Ehsan, Malaysia; email:ilhamkhalit@unisel.edu.my

Back to results | 1 of 1

Top of page

About Scopus

What is Scopus
Content coverage
Scopus blog
Scopus API
Privacy matters

Language

日本語に切り替える
切换到简体中文
切換到繁體中文
Русский язык

Customer Service

Help
Contact us